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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,092	06/15/2006	Norikazu Ito	KAW 133NP	1275

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EXAMINER	
HO, ANTHONY	

ART UNIT	PAPER NUMBER
2815	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,092	ITO ET AL.	
	Examiner	Art Unit	
	Anthony Ho	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) *5-7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-4 in the reply filed on October 22, 2007 is acknowledged.

Accordingly, claims 5-7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 22, 2007.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on June 15, 2006 was filed after the mailing date of the instant application on June 15, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "and with the light transmitting conductive layer" in line 9 of claim 1 is awkwardly placed (is it in relation to the upper electrode or the semiconductor lamination portion?), therefore one of ordinary skill in the art would not be able to define the metes and bounds of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2 and 4, as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kunisato et al (US Patent 5,990,496).

In re claim 1, Kunisato et al discloses a semiconductor light emitting device comprising: a semiconductor lamination portion formed by laminating at least an n-type layer and a p-type layer made of gallium nitride based compound semiconductor so as to form a light emitting portion; a light transmitting conductive layer (60) formed on a surface of the semiconductor lamination portion; and an upper electrode (61) formed so as to be in contact with an exposed surface of the semiconductor lamination portion formed by removing a part of the light transmitting conductive layer, and with the light transmitting conductive layer (Figure 5; column 10 – column 11).

The recitation "wherein an electric current blocking means is formed on the exposed surface of the semiconductor lamination portion which is formed by removing a part of the light transmitting conductive layer, thereby preventing electric current from flowing into a part under the upper electrode while ensuring good adhesion between the upper electrode and the surface of the semiconductor lamination portion" in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

Furthermore, the claimed invention is a product-by-process claim and even though product-by-process claims are limited by and defined by the process, determination of

patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In re claim 2, the recitation "wherein the electric current blocking means is a recessed portion formed on the exposed surface of the semiconductor lamination portion which is formed by removing the light transmitting conductive layer" in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.
Furthermore, the claimed invention is a product-by-process claim and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In re claim 4, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the recessed portion is formed with a depth of 10 to 50 nm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Claim Rejections - 35 USC § 103

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunisato et al (US Patent 5,990,496) as applied to claim 1 above, and further in view of Ota et al (US PUB 2003/0001161).

Ota et al discloses a layer containing oxygen formed in a semiconductor light emitting device (Figure 1; paragraph 0039).

The advantage is to obtain a nitride semiconductor device having good current-voltage characteristics (paragraph 0011).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the semiconductor light emitting device as taught by Kunisato et al with a layer containing oxygen formed in a semiconductor light emitting device as taught by Ota et al in order to obtain a nitride semiconductor device having good current-voltage characteristics.

The recitation "wherein the electric current blocking means is an oxygen containing layer formed on the exposed surface of the semiconductor lamination portion which is

formed by removing the light transmitting conductive layer" in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114. Furthermore, the claimed invention is a product-by-process claim and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (US Patent 6,583,443) in view of Shakuda et al (US Patent 6,107,644). In re claim 1, Chang et al discloses a semiconductor light emitting device comprising: a light transmitting conductive layer (44) formed on a surface of the semiconductor lamination portion; and an upper electrode (48B) formed so as to be in contact with an exposed surface of the semiconductor lamination portion formed by removing a part of

the light transmitting conductive layer, and with the light transmitting conductive layer (Figure 4C; column 5 – column 6).

Shakuda et al discloses a semiconductor lamination portion formed by laminating at least an n-type layer and a p-type layer made of gallium nitride based compound semiconductor so as to form a light emitting portion (column 1; column 6).

The advantage is to obtain a light emitting device with improved efficiency (column 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the semiconductor light emitting device as taught by Chang et al with a semiconductor lamination portion formed by laminating at least an n-type layer and a p-type layer made of gallium nitride based compound semiconductor so as to form a light emitting portion as taught by Shakuda et al in order to obtain a light emitting device with improved efficiency.

The recitation "wherein an electric current blocking means is formed on the exposed surface of the semiconductor lamination portion which is formed by removing a part of the light transmitting conductive layer, thereby preventing electric current from flowing into a part under the upper electrode while ensuring good adhesion between the upper electrode and the surface of the semiconductor lamination portion" in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the

limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

Furthermore, the claimed invention is a product-by-process claim and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In re claim 2, the recitation "wherein the electric current blocking means is a recessed portion formed on the exposed surface of the semiconductor lamination portion which is formed by removing the light transmitting conductive layer" in the claim is functional language and is treated as nonlimiting since it has been held that in device claims, the device must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference. See MPEP 2114.

Furthermore, the claimed invention is a product-by-process claim and even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not

depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In re claim 3, Chang et al discloses a layer containing oxygen (51,61) in the semiconductor light emitting device (Figure 6; Figure 7; column).
It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Figure 4C to contain layer 51 from Figure 6 or layer 61 from Figure 7 since this is within the scope of one of ordinary skill in the art.

In re claim 4, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the recessed portion is formed with a depth of 10 to 50 nm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Sonobe et al (US Patent 6,191,437)

b. Sonobe (US Patent 6,921,928)

c. Tanabe et al (US PUB 2002/0027933)

d. Tsutsui et al (US Patent 6,197,609)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ho whose telephone number is 571-270-1432. The examiner can normally be reached on M-Th: 8:30AM-7:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH
December 18, 2007

JEROME JACKSON
PRIMARY EXAMINER